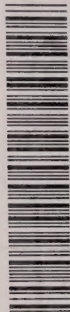


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# COUNTER CLERK


AN OCCUPATIONAL PROFILE



Ministry of  
Colleges and  
Universities

Program  
Resources  
Branch

HEATING, REFRIGERATION & AIR CONDITIONING



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## COUNTER CLERK

## HEATING REFRIGERATION &amp; AIR CONDITIONING

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## The History of the Analysis

On February 15, 1974 as a result of a series of meetings between representatives of the Heating, Refrigeration and Air Conditioning Industry, the Government of Ontario and the Federal Government, agreement was reached to participate in a Canada-wide joint Industry Task Analysis Program.

The Program Resources Branch, Ontario Ministry of Colleges and Universities, accepted the responsibility of providing trained analysts to conduct the actual analysis within Ontario with the guidance of a steering committee selected from a cross-section of the industry and operating under the Chairmanship of Mr. W.F. Marshall of Marshall Refrigeration Co. Ltd.

The Program Resources Branch, Ministry of Colleges and Universities wishes to acknowledge the support and assistance of the following members of the H.R.A. Industry Analysis Steering Committee:

|                          |   |
|--------------------------|---|
| W.F. Marshall (Chairman) | Marshall Refrigeration Co. Ltd.             |
| L. Cianfarani            | Ontario Sheet Metal & Air<br>Handling Group |
| P. Drabinsky             | Techaire Systems Inc./O.R.A.C.              |
| R.D. Fraser              | H.R.A. Institute of Canada                  |
| G. Granek                | G. Granek & Associates                      |
| J.W. Ingram              | Shell Canada Ltd./O.P.A.                    |
| W. Podd                  | Mohawk College/R.S.E.S.                     |
| P.F. Reynolds            | Jenkinson & Co. Ltd./ASHRAE                 |
| N.W. Walden              | O.R.A.C.                                    |
| D.R. Wheeler             | Lennox Industries (Canada) Ltd./<br>HRAI    |

## Scope of the Analysis

The analysis contains only those phases of the Industry considered essential in the Province of Ontario. It is limited to the body of knowledge and skills as outlined and agreed to by the Industry Analysis Steering Committee.

It was agreed that the analysis should be broad enough to cover the whole family of occupations which are representative of the Heating, Refrigeration and Air Conditioning Industry up to, but not including, professional or pure management levels. The scope of each of the occupational groups to be covered, including a general breakdown of the industry as defined by the Committee, is represented graphically by Fig. 1.



Fig. 1

| HEATING              |                   | AIR CONDITIONING             |                          | REFRIGERATION |  |
|----------------------|-------------------|------------------------------|--------------------------|---------------|--|
| Domestic             |                   | Automotive                   |                          | Mobile        |  |
| Commercial           |                   | Residential                  |                          | Marine        |  |
| Gas                  |                   | Commerical/Residential       |                          | Commerical    |  |
| Oil                  |                   |                              |                          |               |  |
|                      | Sheet Metal       |                              |                          |               |  |
|                      |                   | Electrical                   |                          |               |  |
|                      |                   | Plumbing                     |                          |               |  |
| MANUFACTURING        | SYSTEM DESIGN     | DISTRIBUTION                 | INSTALLATION AND SERVICE |               |  |
| Applications Tech.   | Design Consultant | Applications Tech.           | Applications Tech.       |               |  |
| Sales Tech.          | Estimator         | Sales Tech.                  | Estimator                |               |  |
| Telephone Order Desk | Design Draftsman  | Purchasing                   | Sales Tech.              |               |  |
|                      |                   | Order Desk                   | Field Inspector          |               |  |
|                      |                   | Countermand                  | Mechanic                 |               |  |
|                      |                   | Order/Picker and/or Stockman | Purchasing               |               |  |
|                      |                   |                              | Service Order Desk       |               |  |

### Objectives

Although one of the essential aims of this industry/government project is to establish an Ontario standard, it is expected that a number of equally important benefits will be provided such as:

- a basis for effective training to meet the needs of all levels of the industry in order that industry's training resources may be utilized more effectively;
- a career plan with various entry and exit levels to meet individual requirements;
- a basis for common training programs across Canada with a national standard of certification;
- a means for counselling students and attracting young people into a fast growing segment of the economy;
- a means of improving communications between industry and government on training matters.

## Statement of Method

The survey, conducted by field analysis teams supervised by Mr. G.I. Bruce, Senior Training Consultant, commenced in the fall of 1974. By means of personal interviews with industry management and employees, the individual tasks comprising each occupation were determined.

The analysis teams, coordinated by G.F. Starink, asked such questions as:

- What does the worker do?
- How does the worker do it?
- Why is he/she doing it?
- What are the skills and knowledge involved?
- What is the minimum acceptable standard of performance expected?

The goals established were to determine which occupations make up the industry, to describe them in terms of performance objectives and performance standards and through these "occupational profiles" to produce a structured training progression.

Data from Statistics Canada was used to determine the population (i.e. companies) distribution for H.R.A. Industries in Ontario. A representative sample, from which valid and reliable data could be extracted, was established with the aid of the Steering Committee using agreed upon guidelines to cover significant differences for: - geographical distribution on a north/south basis; establishment size (1-10 and 11 plus); number and types of companies within each of the heating, refrigeration and air conditioning segments of the industry.

In the Industry sample encompassing over 50 companies across Ontario approximately 100 interviews were conducted and the resultant data recorded.

A task analysis of this data resulted in a consolidation of occupations from the 57 titles found within the industry to the 12 major occupations submitted to the Steering Committee in mid 1975.

The order of completion of the occupational profiles will be in accordance with priorities established by the Steering Committee.



## Occupational Profiles

The following occupational profiles have been accepted by the Steering Committee. Occupations not indicated as completed are subject to on-going modification in title and content subject to approval by the committee.

Each profile is a description of the occupation in terms of performance objectives and performance standards for Ontario.

- Refrigeration & Air Conditioning Mechanic  
(Completed Dec./75)
- Counterman H.R.A.  
(Completed Jan/76)
- Warehouseman H.R.A.  
(Completed Jan./76)
- Salesperson
- Heating Serviceman - Gas & Oil
- Design Draftsman (Intermediate, Junior)
- Designer (Technician)
- Designer (Technologist)
- Dispatcher
- Estimator
- Order Desk Clerk
- Purchasing Agent



|  |   |  |
|--|---|--|
| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK |   |  |
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| ANALYZE:<br>CUSTOMER NEEDS   | <ul style="list-style-type: none"> <li>- Understand the operation of heating, refrigeration and air conditioning systems with emphases on system variables, including:               <ul style="list-style-type: none"> <li>- temperature</li> <li>- pressure</li> <li>- air flow</li> <li>- superheat</li> <li>- flooding</li> </ul> </li> <li>and the necessity for working together in balance</li> <li>- Understand the function of each system component and the individual or combined influence on the system variables</li> <li>- Apply techniques of deductive questioning</li> <li>- Ascertain the various forms of customer terminology</li> </ul> | <p>Sufficient knowledge of system operation will be exhibited through systematic questioning that will lead to the relevant equipment area in the shortest possible time.</p> <p>The minimum number of diagnostic, analytical, reminder, and leading type questions will be used to elicit maximum response from the customer.</p> <p>Appropriate interpretation of customer responses will lead to the correct identification of the equipment area for selection or advice on replacement and adjustment</p> |

| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to... | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
|---|--|--|
| COMMUNICATE WITH CUSTOMER                             | <ul style="list-style-type: none"> <li>- Converse effectively by telephone and face to face through the use of various techniques</li> <li>- Promote the growth and development of good customer relations</li> <li>- Resolve customer complaints and problems maintaining a realistic balance between company policy and customer satisfaction</li> <li>- Perform a sales function by transmitting product information and gaining customer acceptance</li> </ul> | <p>The counterman will present himself in a courteous manner and execute transactions with speed and efficiency.</p> <p>The customer will be informed and have an understanding of company policy toward:</p> <ul style="list-style-type: none"> <li>- delivery dates</li> <li>- discounts</li> <li>- returned goods</li> <li>- credit</li> <li>- out of stock items and reordering</li> <li>- shipping</li> <li>- warranties</li> </ul> <p>Explain how the product will provide the customer with the results he is looking for using whatever additional aids are available e.g. manufacturer's brochures, reprints from technical publications, item presentation, etc.</p> <p>Assist the customer in identifying the nature of the complaint such as:</p> <ul style="list-style-type: none"> <li>- poor service</li> <li>- failure</li> <li>- misuse of product</li> </ul> <p>Propose follow-up procedures that will allow a selection that is satisfactory to both parties.</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR :<br>COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK |   |   |  |
|--|---|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to ...   | ENABLING OBJECTIVES<br>: Will be able to ...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard ...  |  |
| REGULATE STOCK   | <ul style="list-style-type: none"> <li>- Dispatch and receive merchandise not handled by warehouse procedures</li> <li>- Assist with inventory check</li> <li>- Read and utilize material, equipment and price catalogues</li> <li>- Layout stock items for efficient handling</li> <li>- Apply methods of stock control</li> </ul> | <p>Follow designated interoffice procedures for itemizing and forwarding information on shipping and receiving, including damages and shortages.</p> <p>Organize material and equipment literature into catalogues for pricing and description information.</p> <p>Stock items will be set up on the basis of limited available space.</p> <p>Locate stock for accessibility considering sales rate, size, weight, shape, packaging, fragility, control, safety, etc.</p> <p>Perform a stock control function by:</p> <ul style="list-style-type: none"> <li>- setting up stock records containing an indexing and coding system</li> <li>- establishing a minimum/maximum</li> <li>- establishing and item location code</li> <li>- monitoring stock utilizing:             <ul style="list-style-type: none"> <li>- a location code</li> <li>- records posting procedures for:                 <ul style="list-style-type: none"> <li>- in stock quantities</li> <li>- back-orders</li> <li>- returns</li> <li>- exchange</li> </ul> </li> </ul> </li> </ul> <p>Maintain the counter and storage area free of obstructions and follow general rules of safety and housekeeping.</p> |  |

**SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR :**

COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126  
CLERK

| <b>TERMINAL PERFORMANCE OBJECTIVES</b><br><b>: To be able to...</b> | <b>ENABLING OBJECTIVES</b><br><b>: Will be able to...</b>  | <b>TERMINAL PERFORMANCE CRITERIA</b><br><b>: Minimum acceptable standard...</b>   |
|---|--|---|
| <p>RECORD AND FILE TRANSACTIONS</p>                                 | <ul style="list-style-type: none"> <li>- Identify business forms commonly used for:                             <ul style="list-style-type: none"> <li>- shipping</li> <li>- receiving</li> <li>- inter-office communication</li> <li>- counter sales</li> <li>- credit</li> </ul> </li> <li>- Ascertain precisely what information is required from each transaction for record purposes</li> <li>- Make necessary calculations using:                             <ul style="list-style-type: none"> <li>- price list</li> <li>- discount list</li> <li>- tax list</li> <li>- warranties and guaranties</li> </ul> </li> <li>- Determine relevant information and methods for alerting shipping, purchasing and accounting</li> <li>- Utilize applicable manual filing systems and methods for efficient counter operation</li> <li>- Cross-reference, retrieve and store files</li> </ul> | <p>Select the proper business form for a specific transaction</p> <p>Gather material necessary for completing the form by retrieving necessary files and information</p> <p>Acceptable business forms must be:</p> <ul style="list-style-type: none"> <li>- accurate</li> <li>- complete</li> <li>- legible</li> <li>- neat</li> </ul> <p>Despatch copies to designated places according to inter-office procedures</p> <p>Store records in the correct place according to the system in use and cross-reference if necessary</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR : COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126 |  |  |
|--|--|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| MAINTAIN CUSTOMER AREA   | <ul style="list-style-type: none"> <li>- Aid in the selection of display merchandise</li> <li>- Locate racks and display literature</li> <li>- Display products and label items with required information</li> <li>- Promote new products and accessories .</li> </ul> | <p>Customer area will be maintained by:</p> <ul style="list-style-type: none"> <li>- organizing literature and products in an orderly display and replenish if low</li> <li>- updating material</li> <li>- good housekeeping duties</li> <li>- update counter catalogue</li> <li>- prices</li> <li>- specifications</li> </ul> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR : COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126 |   |  |  |
|--|---|--|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |  |
| <p>READ:</p> <ul style="list-style-type: none"> <li>- CATALOGUES, HANDBOOKS AND MANUALS</li> </ul>                       | <ul style="list-style-type: none"> <li>- Interpret standard terms, symbols and codes used in heating, refrigeration, and air conditioning</li> <li>- Translate part numbers, descriptions and notes found in catalogues, handbooks and manuals</li> <li>- Search and locate specific equipment in catalogues from corresponding identifiers including capacities, ratings and dimensions through the use of charts, tables and graphs</li> <li>- Assemble, sort and rank literature on equipment and materials to supplement supplier catalogues</li> <li>- Establish the differences where more than one model exists</li> <li>- Evaluate technical literature and revise after proper verification</li> <li>- Interpret wiring diagrams for relays, switches, and controls</li> </ul> | <p>Verify a selected item by comparing relative descriptive information extracted from catalogues, handbooks and manuals, with the corresponding requirements of the customer.</p> <p>Ratings, capacities and dimensions will be within predetermined tolerances.</p> <p>Confirm the selected item using data from catalogues, handbooks, and manuals to explain and clarify the basis of final selection.</p> |  |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126   |   |  |
|---|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| <p>SELECT:</p> <ul style="list-style-type: none"> <li>- HARDWARE</li> </ul> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- screws</li> <li>- clips and pins</li> <li>- rivets</li> <li>- clamps</li> <li>- pipe hangers</li> <li>- latches</li> <li>- hinges</li> <li>- strikers</li> <li>- damper parts</li> <li>- fuel oil tank caps and gauges</li> <li>- vane runners</li> <li>- duct hangers</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of assorted types of hardware and their uses in heating, refrigeration and air conditioning</li> <li>- Identify hardware from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- brand name</li> <li>- shape, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> </ul> | <p>Select hardware from those types identified as especially suitable or compatible for a specific customer application.</p> <p>Verify with the customer that the tolerances of the selected hardware fulfill relative needs.</p> <p>Items will be located and supplied within a minimum period of time.</p> |

SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR :

COUNTER  
CLERK

HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126

| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
|--|--|---|
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- ELECTRICAL HARDWARE</li> <li>- of the following types: <ul style="list-style-type: none"> <li>- connectors and terminals</li> <li>- power cords, cable and wire</li> <li>- switches and relays</li> <li>- junction boxes</li> <li>- insulators</li> <li>- sockets and plugs</li> <li>- lamps</li> <li>- fuses</li> <li>- heater elements</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of assorted types of electrical hardware and their uses in heating, refrigeration and air conditioning</li> <li>- Identify electrical hardware from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name</li> <li>- arrangement, configurations, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- voltage and amperage</li> <li>- application</li> <li>- wire and cable codes</li> </ul> </li> </ul> | <p>Select electrical hardware:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the ratings and tolerances of the selected electrical hardware fulfill relative needs. Items will be located and supplied within a minimum period of time.</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126  |  |   |  |
|--|--|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |  |
| <p>SELECT:</p> <ul style="list-style-type: none"> <li>- HAND TOOLS</li> </ul> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- screwdrivers</li> <li>- wrenches and sockets</li> <li>- Allen keys</li> <li>- scrapers and chisels</li> <li>- metal and wood saws</li> <li>- files and reamers</li> <li>- pliers</li> <li>- pipe cutting, flaring and bending tools</li> <li>- hammers</li> <li>- cutters and shears</li> <li>- punches</li> <li>- taps and dies</li> <li>- clamps and vises</li> <li>- fin combs</li> <li>- pouches and boxes</li> <li>- crimping tools</li> <li>- brushes</li> <li>- wheel and bearing pullers</li> <li>- fin combs</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of common hand tools and their uses in heating, refrigeration and air conditioning</li> <li>- Identify hand tools from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- application</li> <li>- size</li> <li>- capacity</li> </ul> </li> </ul> | <p>Select hand tools:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> </ul> <p>Verify with the customer that the parameters of the selected hand tools fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> |  |

**SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR :** COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING **CCDO No. 5135-126**  
CLERK

| <b>TERMINAL PERFORMANCE OBJECTIVES</b><br><b>: To be able to...</b>  | <b>ENABLING OBJECTIVES</b><br><b>: Will be able to...</b>  | <b>TERMINAL PERFORMANCE CRITERIA</b><br><b>: Minimum acceptable standard...</b>  |
|--|--|--|
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- POWER TOOLS &amp; ACCESSORIES</li> </ul> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- drills</li> <li>- saws</li> <li>- grinders</li> <li>- sanders</li> <li>- drill bits</li> <li>- saw blades</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of power tools and their uses in heating, refrigeration and air conditioning</li> <li>- Identify power tools and accessories from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, et.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- application</li> <li>- size</li> <li>- capacity</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate</li> </ul> | <p>Select power tools and accessories:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> </ul> <p>Verify with the customer that the parameters of the selected power tools and accessories fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR : COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK   |  |   |
|---|--|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- CHEMICALS AND DISPENSERS</li> </ul> <p>of the following:</p> <ul style="list-style-type: none"> <li>- water treatment</li> <li>- cleaners and degreasers</li> <li>- oil treatment</li> <li>- fuel oil absorbants</li> <li>- odor neutralizers</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of chemicals and dispensers and their uses in heating, refrigeration and air conditioning</li> <li>- Identify chemical and dispensers from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- classification and characteristic</li> <li>- manufacturer's brand name, chemical name</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- application</li> <li>- location</li> <li>- quantity</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate chemical and dispenser</li> </ul> | <p>Select chemicals and dispensers:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected chemicals and dispensers fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting, and follow through.</p> |



**SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR :**

COUNTER  
CLERK

HEATING, REFRIGERATION AND AIR CONDITIONING **CCDO No. 5135-126**

| <b>TERMINAL PERFORMANCE OBJECTIVES</b><br>: To be able to ...   | <b>ENABLING OBJECTIVES</b><br>: Will be able to ...  | <b>TERMINAL PERFORMANCE CRITERIA</b><br>: Minimum acceptable standard ...   |
|---|--|---|
| <p><b>SELECT</b></p> <ul style="list-style-type: none"> <li>- ELECTRICAL MEASURING INSTRUMENTS</li> </ul> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- voltmeters</li> <li>- ammeters</li> <li>- ohmmeters</li> <li>- wattmeters</li> <li>- multimeters</li> <li>- capacitor analyzers</li> <li>- recorders</li> <li>- compressor analyzers</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of electrical measuring instruments and their uses in heating, refrigerations and air conditioning</li> <li>- Identify electrical measuring instruments and recorders from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- measuring range</li> <li>- sensitivity</li> <li>- resolution and precision</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate</li> </ul> | <p>Select electrical measuring instruments:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected electrical measuring instruments fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |

**SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR:** COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126  
CLERK

| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
|---|--|--|
| <p>SELECT TEST INSTRUMENTS AND ACCESSORIES</p> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- recorders: <ul style="list-style-type: none"> <li>- temperature</li> <li>- humidity</li> </ul> </li> <li>- multifunction</li> <li>- indicators (mechanical, electric or electronic): <ul style="list-style-type: none"> <li>- manometers</li> <li>- hygrometers</li> <li>- psychrometers</li> <li>- tachometers</li> <li>- thermometers</li> </ul> </li> <li>- voltage and continuity testers</li> <li>- gas hazard indicator</li> <li>- CO, CO<sub>2</sub>, O<sub>2</sub>, indicators</li> <li>- air volume and velocity meters</li> <li>- gas leak detectors</li> <li>- test kits: <ul style="list-style-type: none"> <li>- acid</li> <li>- water</li> <li>- combustion</li> </ul> </li> <li>- gauges: <ul style="list-style-type: none"> <li>- high and low pressure</li> <li>- compound</li> <li>- gauge manifold</li> <li>- vacuum</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of test instruments and their uses in heating, refrigeration and air conditioning</li> <li>- Identify test instruments and accessories from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- range</li> <li>- accuracy</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate</li> </ul> | <p>Select test instruments and accessories:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected test instruments fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
|--|--|--|
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- SWITCHING RELAYS</li> </ul> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- general purpose</li> <li>- medium duty</li> <li>- heavy duty</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of switching relays and their uses in heating, refrigeration and air conditioning</li> <li>- Identify switching relays from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- voltage and frequency</li> <li>- full load (amperage)</li> <li>- locked rotor amperage</li> <li>- contact and switch action</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate switching relay</li> </ul> | <p>Select switching relays:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electrical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected switching relay fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126   |   |   |
|---|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- AC ELECTRIC MOTORS AND ACCESSORIES</li> </ul> <p>including:</p> <ul style="list-style-type: none"> <li>- motors</li> <li>- bases and mounting accessories</li> <li>- capacitors</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of electric motors and their uses in heating, refrigeration and air conditioning</li> <li>- Identify AC electric motors and accessories from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- voltage and amperage</li> <li>- dimensions</li> <li>- speed and direction of rotation</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate motor or accessory</li> </ul> | <p>Select AC motors and accessories:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected motor and accessories fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |

**SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR :**

COUNTER  
CLERK

HEATING, REFRIGERATION AND AIR CONDITIONING **CCDO No.** 5135-126

| <b>TERMINAL PERFORMANCE OBJECTIVES</b><br><b>: To be able to ...</b>   | <b>ENABLING OBJECTIVES</b><br><b>: Will be able to ...</b>  | <b>TERMINAL PERFORMANCE CRITERIA</b><br><b>: Minimum acceptable standard ...</b>  |
|--|---|---|
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- FAN COMPONENTS</li> </ul> <p>including:</p> <ul style="list-style-type: none"> <li>- belts</li> <li>- pulleys</li> <li>- blades</li> <li>- blower wheels</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of fan components and their uses in heating, refrigeration and air conditioning</li> <li>- Identify fan components from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- dimensions</li> <li>- blower or suction</li> <li>- direction of rotation</li> <li>- number of blades</li> <li>- installation fitting</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate fan component</li> </ul> | <p>Select fan components:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected fan component fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126 |   |   |
|---|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| SELECT<br>- BLOWERS AND BLOWER REPLACEMENT PARTS  | <ul style="list-style-type: none"> <li>- Understand the function of blowers and blower replacement parts and their uses in heating, and air conditioning</li> <li>- Identify blowers and blower replacement parts from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- performance data</li> <li>- dimensions</li> <li>- application</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate blower or blower replacement part</li> </ul> | <p>Select blowers and blower replacement parts:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with specifications that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected blower and blower replacement parts fulfill realistic needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |



**SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR :**

COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126  
CLERK

| <b>TERMINAL PERFORMANCE OBJECTIVES</b><br><b>: To be able to...</b>  | <b>ENABLING OBJECTIVES</b><br><b>: Will be able to...</b>  | <b>TERMINAL PERFORMANCE CRITERIA</b><br><b>: Minimum acceptable standard...</b>  |
|--|--|--|
| <p>SELECT:</p> <p>PIPE FITTINGS</p> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- couplings</li> <li>- bushings</li> <li>- adapters</li> <li>- elbows</li> <li>- tees</li> <li>- p-traps and bends</li> <li>- plugs and gaskets</li> <li>- nipples</li> <li>- crosses</li> <li>- unions</li> <li>- nuts</li> </ul> <p>NOTE:</p> <p>The above types include:</p> <ul style="list-style-type: none"> <li>- copper</li> <li>- brass</li> <li>- iron</li> <li>- plastic</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of pipe fittings and their uses in heating, refrigeration and air conditioning</li> <li>- Identify pipe fittings from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- material construction</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- type of connection (flare, sweat, thread or weld)</li> <li>- thread information</li> <li>- inside and outside diameters</li> </ul> </li> </ul> | <p>Select pipe fittings:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suited or compatible for a specific customer application</li> <li>- based upon local codes and safety considerations</li> </ul> <p>Verify with the customer that the parameters of the selected pipe fittings fulfill relative needs.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126   |   |  |
|---|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- PRE-FABRICATED DUCTINGS including: <ul style="list-style-type: none"> <li>- fittings</li> <li>- grills, registers and diffusers</li> <li>- insulation</li> </ul> </li> </ul> <p>NOTE:</p> <ul style="list-style-type: none"> <li>- duct fittings include: <ul style="list-style-type: none"> <li>- elbows</li> <li>- branches</li> <li>- takeoffs</li> <li>- stack heads</li> <li>- stack boots</li> <li>- hoods</li> <li>- tees</li> <li>- dampers</li> <li>- collars</li> <li>- endcaps</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of ducting and their uses in heating, refrigeration and air conditioning</li> <li>- Identify ducting from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- size</li> <li>- application</li> <li>- dimensions</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate duct</li> </ul> | <p>Select ducting:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the selected ducting fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

# SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR :

COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126  
CLERK

| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
|---|--|---|
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- VALVES</li> </ul> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- access</li> <li>- adjustable line tap</li> <li>- angle</li> <li>- can tap</li> <li>- check</li> <li>- charging</li> <li>- discharge by-pass</li> <li>- gas shut off</li> <li>- gate</li> <li>- globe</li> <li>- head pressure control</li> <li>- motorized</li> <li>- pressure regulating</li> <li>- relief</li> <li>- solenoid</li> <li>- vacuum</li> <li>- water regulating</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of valves and their uses in heating, refrigeration and air conditioning</li> <li>- Identify valves from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection stock control system such as: <ul style="list-style-type: none"> <li>- size and application</li> <li>- dimensions and connections</li> <li>- type of liquid or gas</li> <li>- temperature, pressure or electrical ratings (if applicable)</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate valve</li> </ul> | <p>Select valves:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected valve fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK |   |  |
|--|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| SELECT<br>- HUMIDIFIERS & DEHUMIDIFIERS  | <ul style="list-style-type: none"> <li>- Understand the function of humidifiers and dehumidifiers and their uses in heating and air conditioning</li> <li>- Identify humidifiers and dehumidifiers from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- capacity or output</li> <li>- dimensions</li> <li>- location</li> <li>- electrical characteristics</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate humidifier and dehumidifier</li> </ul> | <p>Select humidifiers and dehumidifiers:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety considerations</li> </ul> <p>Verify with the customer that the specifications of the selected humidifier or dehumidifier fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126 |  |   |
|---|--|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| SELECT<br>- ELECTRONIC AIR CLEANERS<br>AND AIR FILTERS  | <ul style="list-style-type: none"> <li>- Understand the function of air cleaners and their uses in heating, and air conditioning</li> <li>- Identify air cleaners and filters from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- capacity</li> <li>- efficiency</li> <li>- application</li> <li>- dimensions</li> <li>- electrical temperature ratings</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate air filter or electronic air cleaner</li> </ul> | <p>Select electronic air cleaners and air filters</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the specifications of the selected electronic air cleaner and air filter fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK |   |   |
|--|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| SELECT<br>- THERMOSTATS<br>of the following types:<br>- heating<br>- cooling<br>- heating-cooling<br>- day-night<br>- heavy duty | <ul style="list-style-type: none"> <li>- Understand the function of thermostats and their uses in heating, and air conditioning</li> <li>- Identify thermostats from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- temperature range</li> <li>- heater rating</li> <li>- electrical rating</li> <li>- switching action</li> <li>- differential</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate thermostat</li> </ul> | <p>Select thermostats:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected thermostat fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items. Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |





| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK  |  |  |
|---|--|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- PRESSURE CONTROLS for the following: <ul style="list-style-type: none"> <li>- oil</li> <li>- steam</li> <li>- water</li> <li>- air</li> </ul> </li> <li>including pressure switches</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of pressure controls and their uses in heating, refrigeration and air conditioning</li> <li>- Identify pressure controls from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- operating range</li> <li>- switch action and type</li> <li>- electrical rating</li> <li>- differential</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate pressure control</li> </ul> | <p>Select pressure controls:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected pressure control fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items. Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126 |  |   |
|---|--|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| SELECT<br>- HUMIDITY CONTROLS   | <ul style="list-style-type: none"> <li>- Understand the function of humidity controls and their uses in heating, refrigeration and air conditioning</li> <li>- Identify humidity controls from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- electrical rating</li> <li>- relative humidity range</li> <li>- differential scale</li> <li>- switch action</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate humidity control</li> </ul> | <p>Select humidity controls:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected humidity control fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK  |   |  |
|---|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| <p>SELECT</p> <p>- COMPRESSORS &amp; COMPRESSOR PARTS</p> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- rotary</li> <li>- reciprocating</li> <li>- centrifugal</li> </ul> <p>NOTE:</p> <p>The above types include:</p> <ul style="list-style-type: none"> <li>- open</li> <li>- hermetic</li> <li>- semi-hermetic</li> <li>- two stage</li> </ul> <p>open compressors are:</p> <ul style="list-style-type: none"> <li>- belt driven</li> <li>- direct drive</li> </ul> <p>the cooling methods are:</p> <ul style="list-style-type: none"> <li>- air</li> <li>- water</li> <li>- refrigerant</li> <li>- halocarbons</li> <li>- ammonia</li> </ul> <p>commonly replaced parts are:</p> <ul style="list-style-type: none"> <li>- valve plate</li> <li>- valves</li> <li>- seals</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of compressors and their uses in refrigeration and air conditioning</li> <li>- Identify compressors and compressor parts from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- capacity control (unloaders)</li> <li>- horsepower and capacity</li> <li>- temperature range</li> <li>- dimensions</li> <li>- electrical characteristics</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate compressor and compressor parts</li> </ul> | <p>Select compressors and compressor parts:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected compressor and compressor parts fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK   |  |  |  |
|--|--|--|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |  |
| <p>SELECT:</p> <ul style="list-style-type: none"> <li>- EVAPORATORS AND ACCESSORIES of the following types: <ul style="list-style-type: none"> <li>- flooded</li> <li>- dry</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of evaporators and their uses in refrigeration and air conditioning</li> <li>- Identify evaporators and accessories from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- temperature and pressure</li> <li>- dimensions</li> <li>- connections</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate evaporator and accessories</li> </ul> | <p>Select evaporators and accessories:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- sized so that abnormally high pressure drops do not occur</li> <li>- large enough for the allowable TD (temperature difference) between the entering air and the evaporating refrigerant as dictated by the humidity control required</li> <li>- small enough to maintain a high enough velocity of refrigerant to avoid oil trapping</li> <li>- based upon local codes and safety considerations</li> </ul> <p>Verify with the customer that the parameters of the selected evaporator and accessories fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items. Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |  |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK  |   |   |
|---|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| <p>SELECT:</p> <ul style="list-style-type: none"> <li>- CONDENSERS AND ACCESSORIES of the following types: <ul style="list-style-type: none"> <li>- air cooled</li> <li>- water cooled</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of condensers and their uses in refrigeration and air conditioning</li> <li>- Identify condensers and accessories from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturers brand name, model etc.</li> <li>- shape, arrangement, configuration etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- capacity and horsepower</li> <li>- dimensions</li> <li>- connections</li> <li>- pressure and temperature</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate condenser and accessories</li> </ul> | <p>Select condensers and accessories:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- to handle the compressor load at a desired temperature difference and the expected temperature of the cooling medium</li> <li>- based upon the temperature of the water supply and the water flow rate, in order to determine the design condensing temperature or higher and lower temperature differences, if necessary, on specialized applications</li> <li>- based upon local codes and safety considerations</li> </ul> <p>Verify with the customer that the parameters of the selected condenser and accessories fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, altering, and follow through.</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK  |   |   |
|---|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| <p>SELECT:</p> <ul style="list-style-type: none"> <li>- CONDENSING UNITS</li> </ul> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- air cooled</li> <li>- water cooled</li> <li>- combination and remote</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of condensing units and their uses in refrigeration and air conditioning</li> <li>- Identify condensing units from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- horsepower and capacity</li> <li>- dimensions</li> <li>- electrical characteristics</li> <li>- temperature</li> <li>- refrigerant</li> <li>- connections: <ul style="list-style-type: none"> <li>- type</li> <li>- size</li> </ul> </li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate condensing unit and accessories</li> </ul> | <p>Select condensing units:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with or without options offered by the manufacturer</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected condensing unit fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING C C D O No. 5135-126 |  |  |
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| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| SELECT<br>- UNIT COOLERS AND ELECTRIC DEFROST UNITS  | <ul style="list-style-type: none"> <li>- Understand the function of unit coolers and electric defrost units and their uses in refrigeration</li> <li>- Identify unit coolers and electric defrost units from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- capacity</li> <li>- dimensions and physical data</li> <li>- electrical characteristics</li> <li>- application and location</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate unit cooler and electric defrost unit</li> </ul> | <p>Select unit coolers and electric defrost units:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected unit cooler and electric defrost unit fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126   |   |   |
|---|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- REFRIGERANT CONTROLS</li> </ul> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- thermostatic expansion valve</li> <li>- hand expansion valve</li> <li>- capillary tube</li> <li>- low pressure float valve</li> <li>- high pressure float valve</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of refrigerant controls and their uses in refrigeration and air conditioning</li> <li>- Identify refrigerant controls from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- temperature pressure rating</li> <li>- type and size of connections</li> <li>- type of refrigerant used</li> <li>- capacity</li> <li>- internal or external equalizer</li> <li>- thermostatic charge</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate refrigerant control</li> </ul> | <p>Select refrigerant controls:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected refrigerant control fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No.5135-126   |  |   |  |
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| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |  |
| SELECT<br>- REFRIGERATION AND AIR CONDITIONING CONTROLS<br>including:<br>- contactors and enclosures<br>- fan relays and centers<br>- thermal delay relay<br>- heat pump controls<br>- pressure-activated controls<br>- refrigeration temperature controls<br>- control panels | <ul style="list-style-type: none"> <li>- Understand the function of refrigeration and air conditioning controls and their uses in refrigeration and air conditioning</li> <li>- Identify refrigeration and air conditioning controls from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- coil rating</li> <li>- contact rating</li> <li>- temperature range</li> <li>- electrical rating</li> <li>- switching</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate refrigeration and air conditioning control</li> </ul> | <p>Select refrigeration and air conditioning controls:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected refrigeration and air conditioning controls fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |  |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126  |   |   |
|--|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- DEFROST CONTROLS</li> </ul> <p>including:</p> <ul style="list-style-type: none"> <li>- commercial</li> <li>- appliance</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of defrost controls and their uses in refrigeration</li> <li>- Identify defrost controls from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- voltage and phase</li> <li>- capacity</li> <li>- normal position for contacts during refrigeration cycle</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate defrost control</li> </ul> | <p>Select defrost controls:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> </ul> <p>Verify with the customer that the parameters of the selected defrost control fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126   |   |  |
|---|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- AIR CONDITIONERS               <ul style="list-style-type: none"> <li>- Commercial</li> <li>- Residential</li> </ul> </li> <li>of the following types:               <ul style="list-style-type: none"> <li>- packaged</li> <li>- split</li> <li>- room</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of air conditioners and their uses in air conditioning</li> <li>- Identify air conditioners from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- capacity</li> <li>- electrical characteristics</li> <li>- dimensions</li> <li>- location</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate air conditioner</li> </ul> | <p>Select air conditioners:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the specifications of the selected air conditioner fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR : COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126 |   |  |
|--|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| SELECT<br>- WATER COOLERS AND ICE MAKERS   | <ul style="list-style-type: none"> <li>- Understand the function of water coolers and ice makers and their uses in refrigeration</li> <li>- Identify water coolers and ice makers from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- capacity</li> <li>- dimensions</li> <li>- application</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate water cooler and ice maker</li> </ul> | <p>Select water coolers and ice makers:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected water cooler and ice maker fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING 6CDO No. 5135-126  |  |   |
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| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| <p>SELECT:</p> <ul style="list-style-type: none"> <li>- REFRIGERATION ACCESSORIES of the following types: <ul style="list-style-type: none"> <li>- receivers</li> <li>- heat exchangers</li> <li>- suction accumulators</li> <li>- oil separators</li> <li>- driers</li> <li>- vibration eliminators</li> <li>- suction line filters</li> <li>- strainers</li> <li>- sight glass and moisture indicators</li> <li>- discharge mufflers</li> <li>- crankcase heaters</li> <li>- refrigeration gauges</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of refrigeration accessories and their uses in refrigeration and air conditioning</li> <li>- Identify refrigeration accessories from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- dimensions</li> <li>- type of refrigerant</li> <li>- capacity</li> <li>- horsepower and discharge pressure of the compressor</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate refrigeration accessory</li> </ul> | <p>Select refrigeration accessories:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected refrigeration accessory fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items. Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No.5135-126  |  |   |  |
|---|--|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |  |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- PUMPS</li> </ul> <p>of the following:</p> <ul style="list-style-type: none"> <li>- condensate</li> <li>- ice machine</li> <li>- manual</li> <li>- vacuum</li> <li>- acid</li> <li>- circulating</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of pumps and their uses in heating, refrigeration and air conditioning</li> <li>- Identify pump from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- capacity</li> <li>- efficiency and pressure</li> <li>- motor parameters</li> <li>- dimensions</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate pump</li> </ul> | <p>Select pumps:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected pump fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |  |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING C C D O No. 5135-126 |   |  |
|--|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| SELECT<br>- REFRIGERANTS AND REFRIGERANT OILS<br>of the following types:<br>- ammonia<br>- halocarbons                           | <ul style="list-style-type: none"> <li>- Understand the function of refrigerants and refrigerant oils and their uses in refrigeration and air conditioning</li> <li>- Identify refrigerants and refrigerant oils from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- characteristics</li> <li>- classification</li> <li>- manufacturer's brand name, number, chemical name and formula</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- refrigerant number</li> <li>- cylinder colour code</li> <li>- quantity</li> <li>- viscosity and grade</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate</li> <li>- Safely store and handle refrigerant and refrigerant oils</li> <li>- Select containers and transfer refrigerants from service tanks into portable cylinders</li> </ul> | <p>Select refrigerants and refrigerant oils:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected refrigerants and oil fulfill relative needs.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONINGC C D O No. 5135-126<br>CLERK  |  |  |
|---|--|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- PIPING AND TUBING including: <ul style="list-style-type: none"> <li>- soft copper</li> <li>- hard drawn copper</li> <li>- aluminum</li> <li>- plastic</li> <li>- iron</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of piping and tubing and their uses in heating, refrigeration and air conditioning</li> <li>- Identify piping and tubing from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- diameters</li> <li>- wall thickness</li> <li>- type</li> <li>- pre-charged</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate</li> </ul> | <p>Select piping and tubing:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with mechanical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected piping and tubing fulfill relative needs.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No.5135-126  |   |   |
|---|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- BRAZING AND SOLDERING EQUIPMENT AND SUPPLIES</li> </ul> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- oxyacetylene</li> <li>- propane</li> </ul> <p>including:</p> <ul style="list-style-type: none"> <li>- gas tanks</li> <li>- solders and brazing alloys</li> <li>- fluxes</li> <li>- hoses</li> <li>- handles</li> <li>- stems</li> <li>- regulators</li> <li>- valves</li> <li>- soldering guns and tips</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of brazing and soldering equipment and their uses in heating, refrigeration and air conditioning</li> <li>- Identify brazing and soldering equipment and supplies from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- application</li> <li>- size</li> <li>- type</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate</li> <li>- Safely store and handle propane and acetylene gas tanks</li> </ul> | <p>Select brazing and soldering equipment and supplies:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> </ul> <p>Verify with the customer that the parameters of the selected brazing and soldering equipment fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items. Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR : COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126 |   |  |
|--|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| SELECT<br>- GASKETS  | <ul style="list-style-type: none"> <li>- Understand the function of gaskets and their uses in refrigeration</li> <li>- Identify gaskets from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- dimensions</li> <li>- type of material</li> <li>- shape</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate gasket</li> </ul> | <p>Select gaskets:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the selected gaskets fulfill realtive needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR : COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK  |   |   |
|--|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- OIL BURNER CONTROLS</li> </ul> <p>including:</p> <ul style="list-style-type: none"> <li>- detectors</li> <li>- cadmium cell controls</li> <li>- stack controls</li> <li>- magnetic valve</li> <li>- time delay relay</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of oil burner controls and their uses in heating</li> <li>- Identify oil burner controls from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- ignition rating</li> <li>- electrical rating of contact</li> <li>- switch type, action and timing</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate oil burner control</li> </ul> | <p>Select oil burner controls:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected oil burner control fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items. Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No.5135-126<br>CLERK   |   |  |
|---|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- GAS BURNER CONTROLS</li> </ul> <p>including:</p> <ul style="list-style-type: none"> <li>- combination gas controls and components</li> <li>- spark ignition and glow coil systems</li> <li>- thermocouples</li> <li>- pilot safety controls</li> <li>- control bodies</li> <li>- operator</li> <li>- pressure regulator</li> <li>- gas burner accessories</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of gas burner controls and their uses in heating</li> <li>- Identify gas burner controls from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- electrical rating</li> <li>- dimensions</li> <li>- capacity</li> <li>- type of gas and tip style</li> <li>- temperature-pressure rating</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate gas burner control</li> </ul> | <p>Select gas burner controls:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, altering and follow through.</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK       |  |  |
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| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| SELECT<br>- FLAME SAFEGUARD CONTROLS<br>including:<br>- flame detectors<br>- electronic<br>- photocell<br>- flame rod<br>- programmers | <ul style="list-style-type: none"> <li>- Understand the function of flame safeguard controls and their uses in heating</li> <li>- Identify flame safeguard controls from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- electrical rating</li> <li>- flame response and safety switch timing</li> <li>- contact rating</li> <li>- dimensions and mounting</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate flame safeguard control</li> </ul> | Select flame safeguard controls:<br>- from those types functionally identified as especially suitable or compatible for a specific customer application<br>- with electro-mechanical ratings that satisfy customer requirements without undue excess<br>- based upon local codes and safety consideration<br><br>Verify with the customer that the parameters of the selected flame safeguard control fulfill relative needs.<br>An acceptable alternate will be recommended to fill requests for non-inventory items.<br>Items will be located and supplied within a minimum period of time.<br>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through. |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126  |  |  |
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| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- HYDRONIC CONTROLS</li> </ul> <p>including:</p> <ul style="list-style-type: none"> <li>- high limit</li> <li>- low limit</li> <li>- circulator</li> <li>- combination</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of hydronic controls and their uses in heating, refrigeration and air conditioning</li> <li>- Identify hydronic controls from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- electrical rating</li> <li>- mounting means</li> <li>- temperature range</li> <li>- differential scale range</li> <li>- switch action</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate hydronic control</li> </ul> | <p>Select hydronic controls:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected hydronic control fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCOO No. 5135-126 |   |   |
|---|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| SELECT<br>- WARM AIR CONTROLS<br>including:<br>- fan<br>- limit<br>- combination fan-limit                                    | <ul style="list-style-type: none"> <li>- Understand the function of warm air controls and their uses in heating</li> <li>- Identify warm air controls from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model, etc.</li> <li>- arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- electrical rating</li> <li>- dimensions (element)</li> <li>- mounting</li> <li>- range</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate warm air control</li> </ul> | <p>Select warm air controls:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected warm air control fulfill relative needs</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items</p> <p>Items will be located and supplied within a minimum period of time</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126                      |  |  |  |
|--|--|--|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |  |
| SELECT<br>- OIL BURNER AND COMPONENT PARTS<br><br>of the following:<br>- nozzle<br>- stabilizers<br>- air cones<br>- fuel pumps<br>- filters | <ul style="list-style-type: none"> <li>- Understand the function of oil burners and components and their uses in heating</li> <li>- Identify oil burners and component parts from a minimum of information pertaining to:               <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the:               <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as:               <ul style="list-style-type: none"> <li>- spray angle</li> <li>- capacity</li> <li>- dimensions</li> <li>- mounting</li> <li>- rotation of the pump</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate oil burner and component part</li> </ul> | <p>Select oil burners and component parts:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with tolerances that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected oil burner and component part fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items. Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |  |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION & AIR CONDITIONING CCDO No. 5135-126   |   |  |
|---|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- OIL BURNER IGNITION PARTS</li> </ul> <p>including:</p> <ul style="list-style-type: none"> <li>- transformers and mounts</li> <li>- electrode assemblies</li> <li>- ignition cable or bus bars</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of ignition parts, and their uses in heating</li> <li>- Identify oil burner ignition parts from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- TX body and mounting base size</li> <li>- position and style of H.V. terminals</li> <li>- primary and secondary voltages</li> <li>- electrode and insulator diameter and length</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate ignition part</li> </ul> | <p>Select oil burner ignition parts:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with electro-mechanical ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the parameters of the selected ignition parts fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126<br>CLERK   |   |   |
|--|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- FURNACES</li> </ul> <p>of the following types:</p> <ul style="list-style-type: none"> <li>- gas</li> <li>- oil</li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of furnaces and their uses in heating</li> <li>- Identify furnaces from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- capacity</li> <li>- dimensions</li> <li>- physical data</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate furnace</li> </ul> | <p>Select furnaces:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- with ratings that satisfy customer requirements without undue excess</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the specifications of the selected furnace fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |



| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER CLERK HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No.5135-126   |   |   |
|--|---|---|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...  | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...   |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- REFRACTORY MATERIALS including: <ul style="list-style-type: none"> <li>- brick</li> <li>- castings</li> <li>- cement</li> <li>- insulation</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of refractory materials and their uses in heating</li> <li>- Identify refractory materials from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- temperature rating</li> <li>- dimensions</li> <li>- insulation factor</li> <li>- durability</li> </ul> </li> <li>- Use manufacturer's specifications as resource material to determine the selection of an alternate</li> </ul> | <p>Select refractory materials:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> <li>- based upon local codes and safety consideration</li> </ul> <p>Verify with the customer that the ratings of the selected refractory materials fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items.</p> <p>Items will be located and supplied within a minimum period of time.</p> <p>Initiate and inform the customer of procedures for ordering, shipping, alerting and follow through.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR: COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No.5135-126<br>CLERK   |   |  |
|---|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to...   | ENABLING OBJECTIVES<br>: Will be able to...   | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard...  |
| <p>SELECT</p> <ul style="list-style-type: none"> <li>- OIL BURNER SERVICE TOOLS</li> <li>of the following types: <ul style="list-style-type: none"> <li>- nozzle wrenches</li> <li>- electrode wrenches</li> <li>- electrode tip bending tools</li> <li>- flame inspection mirrors</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Understand the function of common oil burner service tools and their uses in heating</li> <li>- Identify oil burner service tools from a minimum of information pertaining to: <ul style="list-style-type: none"> <li>- function</li> <li>- type</li> <li>- manufacturer's brand name, model etc.</li> <li>- shape, arrangement, configuration, etc.</li> </ul> </li> <li>- Interpret and apply terminology commonly used by the: <ul style="list-style-type: none"> <li>- customer</li> <li>- trade</li> <li>- manufacturer</li> </ul> </li> <li>- Transpose information received into precise data required for final selection from a stock control system such as: <ul style="list-style-type: none"> <li>- application</li> <li>- size</li> <li>- capacity</li> </ul> </li> </ul> | <p>Select oil burner service tools:</p> <ul style="list-style-type: none"> <li>- from those types functionally identified as especially suitable or compatible for a specific customer application</li> </ul> <p>Verify with the customer that the selected oil burner service tool fulfill relative needs.</p> <p>An acceptable alternate will be recommended to fill requests for non-inventory items. Items will be located and supplied within a minimum period of time.</p> |

| SPECIFIC PERFORMANCE OBJECTIVES AND CRITERIA FOR : COUNTER HEATING, REFRIGERATION AND AIR CONDITIONING CCDO No. 5135-126 |   |  |
|--|---|--|
| TERMINAL PERFORMANCE OBJECTIVES<br>: To be able to ...   | ENABLING OBJECTIVES<br>: Will be able to ...  | TERMINAL PERFORMANCE CRITERIA<br>: Minimum acceptable standard ...   |
| <p>OPERATE</p> <ul style="list-style-type: none"> <li>- TESTERS, HEATING CONTROLS</li> </ul>                             | <ul style="list-style-type: none"> <li>- Understand the function of the tester, and its use in analysing multi-stage heating controls</li> <li>- Identify the control for test purposes and select the corresponding subbase</li> <li>- Determine the condition of the control</li> </ul> | <p>The control will be inspected for:</p> <ul style="list-style-type: none"> <li>- rust, water or acid damage</li> <li>- broken or missing parts before testing.</li> </ul> <p>The operating voltage will be selected prior to testing.</p> <p>The tester will be operated according to the manufacturer's instructions to:</p> <ul style="list-style-type: none"> <li>- test a control for normal operations.</li> <li>- simulate various control failures to analyse related system malfunctions.</li> </ul> <p>The condition of the control will be defined and recorded.</p> |







